

IN THE CLAIMS

1. (Currently Amended) A method, comprising:
transmitting a signal having an AC component to a subscriber line;
receiving at least a portion of the transmitted signal from the subscriber line;
determining at least a portion of a period of the AC component based on the received
signal; and
performing a function of a line card in response to determining at least the portion of the
period of the AC component.

a 2. (Currently Amended) The method of claim 1, wherein the signal is a ringing
signal and wherein performing the function includes at least one of performing ring-trip detection
and performing AC-fault detection.

3. (Currently Amended) The method of claim 1, ~~wherein the signal is a fault
detection signal and wherein performing the function includes performing AC fault
detection~~ further comprising calculating a squared value of the AC component over the
determined portion of the period.

4. (Original) The method of claim 1, wherein determining at least the portion of the
period includes determining at least one zero crossing of the AC component.

5. (Original) A method, comprising:

transmitting a signal having at least one of an AC component and a DC component to a subscriber line;

receiving at least a portion of the transmitted signal from the subscriber line;

filtering the DC component from the received signal;

determining a value proportional to a power of the AC component of the received signal over at least a portion of a period of the AC component; and

performing a function of a line card in response to determining the value proportional to the power of the AC component.

6. (Currently Amended) The method of claim 5, wherein determining the value proportional to the power of the AC component includes:

~~determining at least a portion of a period of the AC component; and~~

calculating a squared value of the AC component for at least the portion of the period.

7. (Original) The method of claim 6, wherein determining at least a portion of a period includes determining at least the portion of the period using zero crossing.

8. (Original) The method of claim 6, wherein the squared value of the AC component is calculated until the squared value is at least equal to a threshold value.

9. (Original) The method of claim 5, wherein the signal is a ringing signal and wherein performing the function includes performing ring-trip detection.

10. (Original) The method of claim 5, wherein the signal is a fault detection signal and wherein performing the function includes performing AC-fault detection.

11. (Currently Amended) An apparatus, comprising:

circuitry capable of:

transmitting a signal having an AC component to a subscriber line; and

receiving at least a portion of the transmitted signal from the subscriber line;

a
~~computation logic~~ a digital signal processor capable of determining at least a portion of a period of the AC component based on the received signal; and

~~logic~~ the circuitry further capable of performing a function of a line card in response to determining at least the portion of the period of the AC component.

12. (Currently Amended) The apparatus of claim 11, wherein the signal is a ringing signal and wherein the ~~logic~~ circuitry capable of performing the function includes the ~~logic~~ fault detection circuitry capable of performing ring-trip detection.

13. (Currently Amended) The apparatus of claim 11, wherein the signal is a fault detection signal and wherein the ~~logic~~ circuitry capable of performing the function includes the fault detection circuitry ~~logic~~ capable of performing AC-fault detection.

14. (Currently Amended) The apparatus of claim 11, wherein the digital signal processor ~~computation logic~~ capable of determining at least a portion of a period includes the

digital signal processor ~~computation logic~~ capable of determining at least one zero crossing of the AC component.

15. (Currently Amended) An apparatus, comprising:

circuitry capable of:

transmitting a signal having at least one of an AC component and a DC component to a subscriber line; and

receiving at least a portion of the transmitted signal from the subscriber line;

a filter capable of filtering the DC component from the received signal;

a digital signal processor ~~computation logic~~ capable of determining a value proportional to a power of the AC component of the received signal over at least a portion of a period of the AC component; and

~~logic~~ the circuitry further capable of performing a function of a line card in response to determining the value proportional to the power of the AC component.

16. (Currently Amended) The apparatus of claim 15, wherein the digital signal processor ~~computation logic~~ capable of determining the value proportional to the power of the AC component includes the digital signal processor ~~computation logic~~ capable of:

~~determining at least a portion of a period of the AC component; and~~

calculating a squared value of the AC component for at least the portion of the period.

17. (Original) The apparatus of claim 15, wherein the squared value is computed until it is at least equal to a threshold value.

18. (Original) The apparatus of claim 16, wherein determining at least the portion of the period includes determining at least the portion of the period using zero crossing.

19. (Original) The apparatus of claim 15, wherein the signal is a ringing signal and wherein performing the function includes performing ring-trip detection.

a 20. (Original) The apparatus of claim 15, wherein the signal is a fault detection signal and wherein performing the function includes performing AC-fault detection.

21. (Currently Amended) A line card, comprising:

a subscriber line interface circuit capable of:

transmitting a signal having at least one of an AC component and a DC

component to a subscriber line; and

receiving at least a portion of the transmitted signal from the subscriber line;

a filter capable of filtering the DC component from the received signal;

a digital signal processor ~~computation logic~~ capable of determining a value proportional

to a power of the AC component of the received signal over at least a portion of a

period of the AC component; and

the subscriber line interface circuit further ~~logic~~ capable of performing a function of a line

card in response to determining the value proportional to the power of the AC

component.

22. (Original) The line card of claim 21, wherein the subscriber line interface circuit is a voltage subscriber line interface circuit.

23. (Currently Amended) The line card of claim 21, wherein the digital signal processor ~~computation logic~~ capable of determining the value proportional to the power of the AC component includes the digital signal processor ~~computation logic~~ capable of:

~~determining at least a portion of a period of the AC component; and~~

calculating a squared value of the AC component for at least the portion of the period.

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24. (Original) The apparatus of claim 21, wherein the signal is a ringing signal and wherein performing the function includes performing ring-trip detection.

25. (Original) The apparatus of claim 21, wherein the signal is a fault detection signal and wherein performing the function includes performing AC-fault detection.

26. (Currently Amended) An apparatus, comprising:

means for transmitting a signal having an AC component to a subscriber line;

means for receiving at least a portion of the transmitted signal from the subscriber line;

means for determining at least a portion of a period of the AC component based on ~~of~~ the received signal; and

means for performing a function of a line card in response to determining at least the portion of the period of the AC component.

27. (New) The method of claim 3, wherein the AC component represents AC current, and wherein calculating the squared value comprises calculating the squared value of AC the current.

28. (New) The method of claim 5, wherein the AC component represents AC current, wherein determining the value proportional to the power comprises determining a squared value of the AC current.

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Cont 29. (New) The method of claim 11, further comprising calculating a squared value of the AC component over the determined portion of the period.

30. (New) The method of claim 16, wherein the AC component represents AC current, wherein calculating the squared value comprises calculating the squared value of the AC current.
